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10/574,286	03/31/2006	Masayuki Oikawa	287800US26PCT	5521

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EXAMINER

CHAN, CEDRIC A

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1797

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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DETAILED ACTION

Applicant's submission dated June 16, 2010 is acknowledged. The amendment and remarks therein were supplemental to the submission dated May 24, 2010. Both submissions have been entered into the record, and the amendments and remarks set forth therein considered. Currently, claims 1-10, 12-18 and 21-23 remain pending in this application; claims 11, 19 and 20 have been canceled.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-10, 12-18 and 21-23 rejected under 35 U.S.C. 103(a) as being unpatentable over Marumo et al. (US 2003/0000458) in view of Ju et al. (Korean Patent Publication 2000-0020879).

Claims 1-10, 12-18 and 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marumo et al. (US 2003/0000458) in view of Ju et al. (Korean Patent Publication 2000-0020879).

Marumo discloses a quartz member for semiconductor manufacturing as well as a method for metal analysis using said quartz member.

Fig. 11 shows the apparatus of Marumo. The apparatus comprises a level base plate 2 having a circular opening 2a in the central portion thereof. In the opening 2a of the base plate 2, a quartz tube 3 is inserted through as a cylindrical treatment tube that is open at a lower end and has a flange portion 3a at the open end. A periphery portion of the flange portion 3a of the quartz tube 3 is removably attached to the base plate 2 through a manifold 4 (para. [0154]).

Downward of the quartz tube 3, a closing plate 50 for opening/closing a lower end opening thereof is disposed. On the closing plate 50, a wafer boat 51 for holding many pieces of semiconductor wafers level in multiple steps spaced in a vertical direction is disposed through a heat insulating mould 52. The closing plate 50 takes the wafer boat 51 into and out of the quartz tube 3, being connected to an elevator 53 for opening/closing the closing plate 50 (para. [0157]).

In operation, the closing plate 50 is opened, the wafer boat 51 holding the semiconductor wafers being introduced into the quartz tube 3 together with the heat insulating mould 52 due to an ascending movement of the closing plate 50. The treatment gas is introduced through the gas inlet tube portion 3b to start treating (para. [0158]).

The analysis method comprises a first step of exposing a layer to be analyzed, a second step of chemically decomposing the layer to separate, a third step of analyzing an amount of metal, a fourth step of obtaining a volume of the layer, a fifth step of exposing anew a layer to be analyzed, and a sixth step of obtaining a concentration distribution of diffused metal. In the first step of exposing the layer to be analyzed, the layer to be analyzed at a desired depth in a quartz specimen is exposed.

In the second step of chemically decomposing the layer to separate, after the chemical decomposition of the layer, a decomposition product is separated from the quartz specimen. In the third step of analyzing an amount of metal, the amount of metal in the separated decomposition product is analyzed. In the fourth step of obtaining a volume of the layer, the volume of the layer is obtained from a volume change between

the quartz specimens before the chemical decomposition of the layer and after the separation of the decomposition product.

In the fifth step of exposing anew a layer to be analyzed, a layer to be analyzed furthermore inside in a thickness direction than the layer to have been analyzed is exposed. In the sixth step of obtaining a concentration distribution of diffused metal, the second to fifth steps are repeated to obtain the concentration distribution of the metal diffused in a thickness direction of the quartz specimen (see paragraph [0047]).

Marumo does not disclose the exact configuration of the "examination assistant device" that is claimed in the instant application. Accordingly, Marumo's method does not involve specifically the examination assistant device claimed.

Applicant-cited patent publication of Ju et al. (Korean Patent Publication 2000-0020879) teaches just such an examination assistant device.

Ju's device includes a pair of end plates (64) configured to engage with a quartz pole as taught in Marumo's disclosure and recited in the instant claims. A frame part (61) connects the pair of end plates, and the structure comprises an open area/region which is fully capable of receiving solution therein (see Fig. 4 of Pub. 2000-0020879).

It would have been obvious to incorporate the device taught and described by Ju in 2000-0020879, into the apparatus described by Marumo, in order to achieve the inspection of semiconductor wafers in Marumo's apparatus. Ju teaches, for example, that the wafer boat (which would be compatible with Marumo's apparatus -- see Marumo, Fig. 11 & Ju, Fig. 2) can prevent cracks and errors in wafer handling (see

Abstract of 2000-0020879). Marumo also suggests the use of a wafer boat, as discussed previously.

Response to Arguments

Applicant's remarks filed June 16, 2010 have been fully considered. It is noted that in these remarks Applicant points out the subject matter added by supplemental amendment to claim 21 but makes no further remarks on the findings set forth in the most recent Office Action.

The arguments filed May 24, 2010 are responsive to the Office Action dated February 22, 2010.

Applicant's arguments (see pg. 9-10 of the May 24, 2010 reply) with respect to the rejection of claims 1-10, 12-18, and 21-23 as being indefinite under 35 U.S.C. §112, second paragraph have been fully considered and are persuasive.

Applicants argue that "elements recited in the preamble of a claim may provide antecedent basis for elements recited in the main body of a claim.

Indeed, the Courts have held previously that "clear reliance on the preamble during prosecution to distinguish the claimed invention from the prior art transforms the preamble into a claim limitation because such reliance indicates use of the preamble to define, in part, the claimed invention...Without such reliance, however, a preamble generally is not limiting when the claim body describes a structurally complete invention such that deletion of the preamble phrase does not affect the structure or steps of the

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claimed invention.” *Catalina Mktg. Int ’l v. Coolsavings.com, Inc.*, 289 F.3d at 808-09, 62 USPQ2d at 1785.

In the *Catalina Mktg. Int ’l v. Coolsavings.com, Inc.* ruling, the standard used in ascertaining patentability in a preamble element included ascertaining whether the prosecution established a “clear reliance on the preamble ... to distinguish the claimed invention from the prior art.” The claims herein establish such a “clear reliance” on the preamble (and the elements listed therein), and so the preamble serves to effectively limit the invention being claimed and must be treated as such during prosecution.

Because the contents of the preamble are, in this case, treated as limiting aspects of the invention, the elements listed in the claim body (e.g., quartz product, examination objective portion, etc.) do not lack antecedent basis. The rejection of claims 1-10, 12-18, and 21-23 under U.S.C. §112, second paragraph is thus withdrawn.

An important distinction must be made, however, between Examiner’s line of reasoning above and Applicant’s contention suggesting that those elements listed in the preamble (and not positively recited in the main body of a claim) are “not part of the subject to which the claims are drawn, but rather are supporting pieces to be used with the claimed device.” To this contention, Examiner must respectfully disagree.

As in *Catalina Mktg. Int ’l v. Coolsavings.com, Inc.*, Applicant description of preamble structural elements as “supporting pieces” addresses the importance of ascertaining ‘inter-dependency’ between elements listed in the claims (that is, the dependence of structural elements claimed in the main body of a claim on structural elements listed in the preamble). It is precisely the fact that the preamble structural

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elements are "supporting" pieces of the invention that the antecedence rejections have been withdrawn. Such "supporting pieces" are required for the invention to be able to operate and function as is defined by the limitations set forth in the main bodies of the claims.

For example, claim 1 recites in the final two lines of the claim, that "the process solution [is] in contact with the examination objective portion to etch the examination objective portion." The "examination objective portion," clearly, is an aspect of the examination assistant device which must necessarily be, in Applicant's words, "part of the subject to which the claims are drawn." Without the examination objective portion, the "examination assistant device" would not be structurally or functionally whole.

Thus, to be clear, the claim elements referring to components listed in the preambles do not lack sufficient antecedent basis because the preamble elements in question serve effectively to limit the definition of the invention as a whole. Once again, this conclusion is drawn from the finding that the prosecution establishes sufficient evidence of a clear reliance of main body claim limitations on the preamble components in question, said "clear reliance" being an appropriate standard to apply in determining proper treatment of structural features recited in the preamble but not defined in the body of a claim. Because the preamble features are, in this case, interpreted as structurally limiting features, it follows that these features are considered "part of the subject" to which the claims are drawn, i.e. the "pair of concave portions," the "examination objective portion."

Applicant traverses the rejection of claims 1 and 9 under 35 U.S.C. §103(a), arguing that i) “Marumo and Ju can not be combined to teach all of the features recited in Claims 1 and 9,” and that ii) “[e]ven assuming, arguendo, that Marumo and Ju could be combined to teach all of the features of Claims 1 and 9, those two references would not be combined.”

Applicant alleges in pg. 11 that the disclosure of Ju has “nothing whatsoever to do with an examination assistant device for identifying metal impurities in a quartz product,” and more specifically, that Ju fails to teach the solution receiver presented in the instant claims since the device taught by Ju “can not hold a solution therein.”

Examiner respectfully disagrees. A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus teaches all the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the

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shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to CEDRIC CHAN whose telephone number is (571)270-3721. The examiner can normally be reached on Monday-Thursday 8:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/C. C./
Examiner, Art Unit 1797

/Jill Warden/
Supervisory Patent Examiner, Art Unit 1797